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Neglect of an Obvious Issue
The Storage of Human Remains

For museums and universities, the care and housing of Native American human remains recovered from archeological contexts have become an issue of the utmost importance since the enactment of the Native American Graves Protection and Repatriation Act (NAGPRA) in 1990. While anthropologists, museum managers, and Native American communities negotiate and struggle with NAGPRA issues, a publicly available housing standard has yet to be devised and agreed upon by these diverse communities. Published information regarding the care and storage of human remains is vague at best, and assessment of appropriate housing for human remains is compounded by a lack of communication between the different parties within anthropology and the Native American community. This lack of communication is especially apparent within anthropology, where each sub-discipline has a different and often informal "code of ethics" regarding the preservation and respectful housing of human remains, and no public consensus exists between sub-disciplines. The following article considers the issue of long-term storage and care of human remains in terms of preservation, NAGPRA requirements, and research needs.

Our discussion is inspired by a recent opportunity that was presented to the Department of Anthropology and Ethnic Studies at the University of Nevada, Las Vegas. Our existing building, which houses classrooms, a laboratory, and storage facilities, will be demolished, and a new building erected in its place. Planning a new building allows those of us working in the storage facility, which contains archeological and forensic collections, to make recommendations for upgrading storage. During our evaluation, we gave special attention to the housing of all human remains in the care of the Department.

Our primary goal was to identify and balance the concerns of Native Americans, the needs of researchers, and the cost and space limitations of storage. In light of this goal, we sought two specific genres of information. We first searched for published literature that would guide us in our assessment of preservation, storage, and size constraints as they related to the storage of human remains. Professional literature seems to focus mainly on excavation, transportation, and reconstruction (Bass, 1995; Ubelaker, 1989; White, 2000). Unfortunately, the literature neglects the issue of long-term housing of human remains. The second component of our evaluation involved assessing the needs of Native Americans, physical anthropologists, museum curators, and collection managers, conservators, and archeologists.

Discussion of Perspectives

Native Americans. Different tribes have different needs when it comes to demonstrating proper respect for a deceased individual. Therefore, it is important to consult with the appropriate tribes when considering specific housing needs. Consultations specific to our collections revealed that, in general, it is important for human remains to resemble a human form in storage. The bones should not be randomly scattered throughout the box, nor should different parts of an individual be stored in separate areas or containers. For example, crania are sometimes housed separately from the post-cranial skeleton. We have found that this arrangement is offensive and disrespectful to Native Americans and others. It is preferable that the body be presented in a manner that is as close to its position prior to excavation or retrieval as possible, keeping in mind that a box for a fully extended adult is too large and awkward to be safely handled. Finally, bone should be in contact only with inert organic materials.

Collection Managers and Conservators. The main concern of collection managers and conservators is preservation. They often make decisions about box materials, size, durability, organization, cataloging, and registration. Because our collective experience has shown that

handling causes the most damage to human osteological remains, it is vital to create an environment that allows access, while simultaneously reducing damage caused by excessive handling.

Limited space is also a major issue. Space constraints often require boxes to be placed or stacked on high shelves. With this in mind, it is important to realize that boxes may be tilted at sharp angles as they are removed from shelves. Proper storage must allow for tilting, while also preventing the contents of boxes from rolling around and becoming damaged. Providing sturdy, wide, platform-ladders is recommended to facilitate access under such circumstances.

Keeping collections clean is yet another challenge to collections managers. It is essential to have storage containers that are made of materials that are easy to clean. Dust tends to collect in the best of environments, so it is good to have the boxes and shelves made of a material that can quickly and easily be cleaned.

Archival housing at the most basic level starts with a storage box made from inert and acid free materials. The box must also be durable and able to support the weight of larger individuals, yet not be so heavy that it is difficult to maneuver.

Organizing collections in numerical order by catalog number greatly reduces the amount of time it will take to locate individuals. It is preferable to organize individuals numerically by catalog number rather than by age, sex, race, or some other variable because catalog numbers represent a clear and understandable system that does not make presumptions about a researcher's interests or specific questions. Having a sortable electronic database containing a biological profile (i.e. age, sex, and race information) as well as a bone inventory is recommended to reduce initial handling.

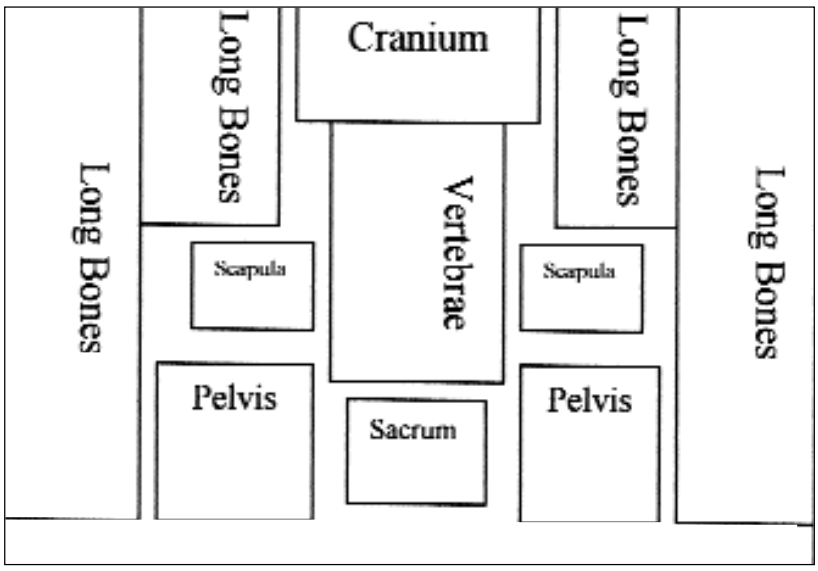
Physical Anthropologists. Time constraints and accessibility are two prominent concerns of physical anthropologists. Researchers often have a limited amount of time in which to study a given collection. Fiscal constraints related to the cost of conducting research limit the amount of time a researcher can spend with a given collection. The operating schedule of a repository, the time constraints of museum personnel, and the needs of other researchers may also restrict time.

Accessibility also influences the amount of time a researcher spends with collections. In addition to proper organization, it is essential that the storage container be of adequate size. Researchers often find it frustrating to waste valuable time trying to fit an individual into a box that is clearly too small. It is also helpful to have bones grouped together within a box. For instance, keeping the hand bones together and sorted by right and left sides, keeping the ribs together, and keeping the vertebrae together reduces the amount of time a researcher spends looking for and placing specific bones. Grouping also reduces the amount of handling a skeleton is subjected to and reduces damage to the bones.

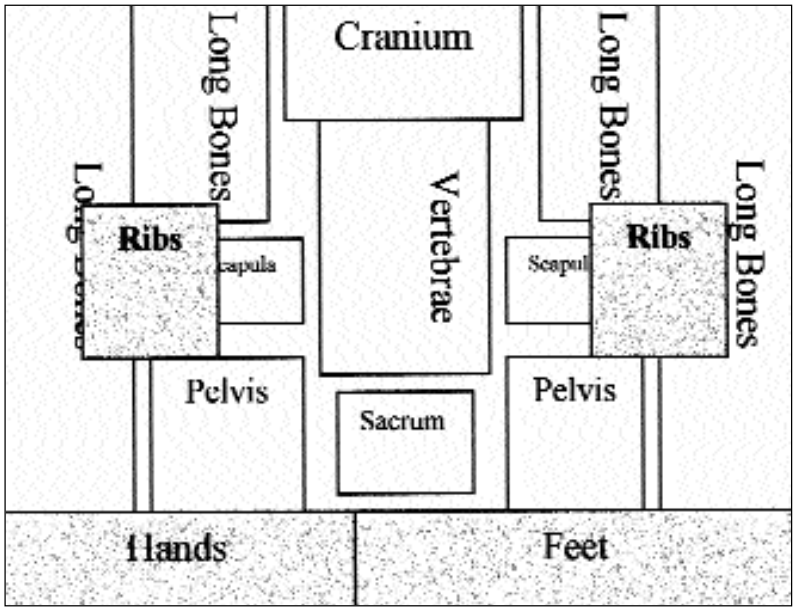
Conclusions

After reviewing the needs of the various groups interested in the long-term housing of human remains, we designed a storage box that we hope satisfies at least the most important concerns of these groups. We have focused on the issues of size, materials, and layout.

Size is an important aspect of box building. If the box is too small, there is a tendency to either split up the individual or to force remains into a space in which they do not fit. If the box is too large, then there is movement of material



Box without trays. Bones are separated by foam wedges that also keep the bones from shifting while the box is being moved.



Box with trays. There are separate trays for the right and left hands as well as separate trays for the right and left feet bones. The trays for each set of bones stack on top of each other.

within the box, which is damaging to the bone. Large boxes are also unwieldy and impractical for storage and handling purposes. Through continual experimentation, we have concluded that a box size of 31" x 24" x 6" is the most appropriate size given all the listed constraints. The box size is based on maximum long bone lengths of a complete male as defined by Ubelaker's stature table (Ubelaker, 1989:146).

We suggest the use of inert materials, as recommended by conservators. A corrugated polyethylene sheet, such as Corex, is an inert acid-free material that is reasonably priced, durable, flexible, lightweight, and easily cleaned. We also suggest adding a layer of open cell polyethylene foam, such as Ethafoam, to the bottom (and possibly sides) of the box for cushioning. To accommodate the concerns of Native American groups, we recommend placing a layer of well-washed and rinsed unbleached and undyed cotton muslin fabric over the Ethafoam to ensure that bone is in contact with organic material.

The layout of a box should accommodate both Native American concerns and the needs of physical anthropologists. We have compartmentalized and compressed the placement of bone elements, while prioritizing anatomical order. The cranium is placed at the top of the box and flanked by all long bones on either side. Below the cranium are the vertebrae and the pelvis. Scapula and clavicle are placed below long bones on the appropriate side. Sorted ribs, hand, and foot bones are organized according to right and left sides, and are placed in open trays above the long bones. This layout facilitates research by improving access and reducing the amount of time spent locating and placing bones, while also approximating the original anatomical position of the individual. Such a layout also minimizes handling and reduces the amount of damage to bones.

Summary

The housing of human remains, regardless of cultural affiliation, is a basic issue within anthropology that has not been standardized or actively discussed in current literature. Despite the indispensable function of a box, the issue of how to best create satisfactory housing has been sorely neglected. There is a tendency to see the box as an easily resolved non-issue. However, as we hope we have shown, there are many issues to consider when designing proper storage. The box we have designed is part of an ongoing project related to storage and housing issues. We plan to continue intercultural and interdisciplinary negotiations and further modify our design. We welcome feedback and would appreciate suggestions.*

Note

* Send feedback to <cassmanv@nevada.edu>.

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